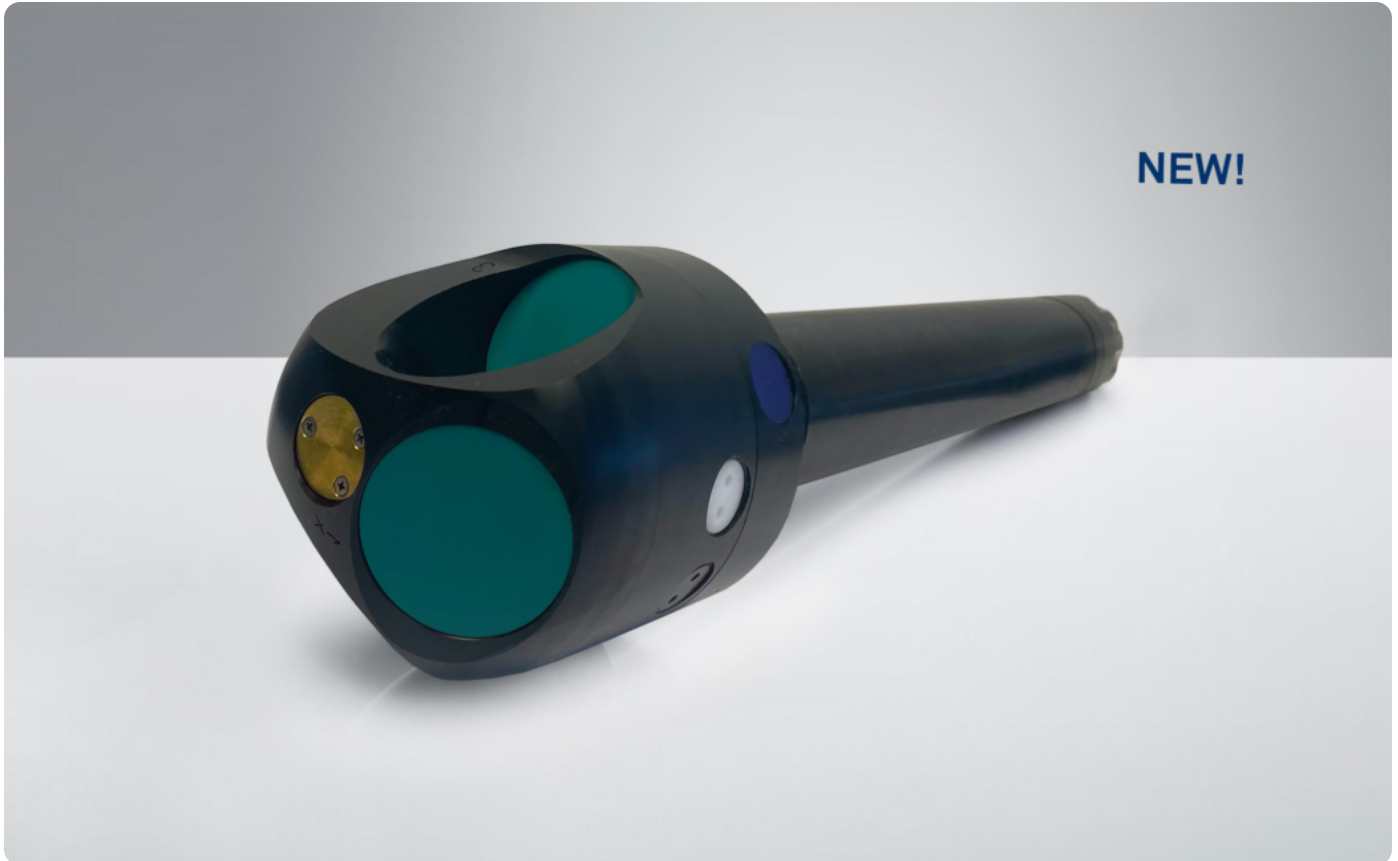


Aquadopp Profiler 400 kHz - 500 m, Z-Cell, Generation 2



Up to 90 m current profiling range and no blanking; ideal for mean and boundary current measurements

Need to collect accurate 3D currents very near the seabed or sea surface, in addition to a full water-column profile?

The Z-Cell (Zero Cell) 400 kHz Aquadopp allows current measurement to start right at the instrument's level through an innovative approach: it has side-looking beams fully integrated into the instrument's head, effectively removing the blanking distance normally applicable to ADCPs.

See the details of the Generation 2 Aquadopp updates in the release notes [here](#).

Highlights

- ✓ Up to 90 m current profiling range
- ✓ Capable of measuring surface or bottom currents
- ✓ Ideal for mean current measurements

Applications

- ✓ Mounted on bottom frames, with ability to also measure near-bed currents
- ✓ Mounted on surface buoys, with the ability to also measure surface currents
- ✓ Mean flow measurements with high focus on ease of use and simplicity
- ✓ Studies of tidal currents

Technical specifications

→ Water velocity measurements

Nominal profiling range*	90 m
Cell size	1-8 m
Maximum number of cells	200
Minimum blanking	0 m with Z-Cell enabled
Velocity range (along beam)	±1 m/s, ±2.5 m/s, ±5 m/s
Accuracy	±1% of measured value ±0.5 cm/s
Velocity range (horizontal)	±2.3 m/s, ±5.75 m/s, ±11.5 m/s
Horizontal velocity precision**	Typ. 1cm/s
Maximum sampling rate (output)	1 Hz
Wave measurement	PUV (optional)

* Depending on scattering conditions

** Consult instrument SW

→ Z-Cell Properties

Distance to measurement volume	0.05 - 2.5 m
Cell size	0.2 - 1.5 m
Velocity range (Horizontal)	±5 m/s
Transducer acoustic frequency	2 MHz
Number of beams	2

→ Echo intensity

Sampling	Same as velocity
Resolution	0.5 dB
Dynamic range	90 dB
Transducer acoustic frequency	400 kHz
Number of beams	3 (see GA drawing for angles)
Beam width	1.9° (3.8° total)

→ Sensors

Temperature:

Temp. range	-4 to +40 °C
Temp. accuracy/resolution	0.1 °C/0.01 °C
Temp. time response	<1 min

Compass: Solid State Magnetometer

Accuracy/resolution <2° for tilt <30°/0.01°

Tilt: Solid State Accelerometer

Accuracy/resolution 0.2° for tilt <30°/0.01°

Maximum tilt Full 3D

Up or Down Automatic detect

→ Sensors

Pressure:	Piezoresistive
Range	30 m / 100 m / 500 m
Accuracy/Precision	0.5% FS / 0.005% of full scale

→ Data recording

Capacity	16 GB
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→ Real-time clock

Accuracy	±1 min/year
Backup in absence of power	4 weeks

→ Data communications

I/O	RS-422 (Inquire for RS-232)
Communication Baud Rate	9600 Baud-1.2 Mbaud (default 115200 Baud)
User control	Nortek Deployment Software or direct ASCII commands, with binary or ASCII data output

→ Software

Operating system	Cross platform
Functions	Deployment planning, instrument configuration, data retrieval and conversion. Online data display.

→ Power

DC input	9-24 VDC
Absolute maximum DC input	26 VDC
Maximum peak current	4.5 A
Power consumption	Consult Nortek Deployment Software
Sleep current	< 40 uA
Transmit power	Adjustable

→ Batteries

Internal Battery Capacity	1-3x 50 Wh (Alkaline), 2-3x 165 Wh (Lithium), 1-3x 76Wh (Li-Ion)
Battery weight	430g per 50 Wh (Alkaline), 380g per 165 Wh (Lithium), 300g per 76Wh (Li-Ion)

→ Environmental

Operating Temperature	-5 to +40 °C
Storage Temperature	-20 to +60 °C
Shock and vibration	Shock: IEC 60068-2-27, Vibration: IEC 60068-2-64
EMC	EN IEC 61000-6-2:2019, EN IEC 61000-6-4:2019
Depth rating	500 m

→ Connectors

Bulkhead (Impulse)	MCBH-8-FS Brass
Cable	PMCIL-8-MP on 5m (default) polyurethane cable

→ Materials

POM, Naval Brass, Titanium Gr.5, Epoxy

→ Dimensions (see drawings for details)

Maximum housing diameter	75 mm
Maximum length	701 mm

→ Weight

Weight in air (without batteries)	3900 g
Weight in water (without batteries)	60 g
Weight in air, short housing (without batteries)	3300 g
Weight in water, short housing (without batteries)	510 g

→ Head configurations

S4VZ	Shallow water, 400 kHz, Vertical orientation, Z-Cell Profiler
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→ Online cable information

Cable length	0-10m; 10-50m; 50-500m
Power wire gauge	18AWG; 18AWG; 18AWG
Hardware	Standard; Standard; Long cable kit
Input voltage	9-24VDC; 24VDC +/-0,5; 48VDC +/-5
Absolut maximum DC input	26 VDC; 26 VDC; 51 VDC
Communication	RS232/RS422/115200; RS232/RS422/115200; RS422/115200